

Preliminary Amendment

Application 09/964,747
Attorney Docket: 042390.P12691**Amendments to the Claims**

Please amend the claims in the manner indicated:

1-28 (Cancelled)

29. (New) An assembly comprising a printed circuit board and a handle,
the printed circuit board having an upper surface, a lower surface, and a first edge
having a first member;
the handle having a second edge having a second member, and a third edge, the
third edge to be handled by automated assembly equipment;
wherein the first and second members reversibly interlock and attach the printed
circuit board to the handle; and
wherein the third edge extends beyond components overhanging the printed circuit
board.

30. (New) The assembly of claim 29, wherein the first member comprises an opening on the first
edge of the printed circuit board between the first surface and the second surface, and
wherein the second member comprises a protrusion that interlocks with the first member
such that the second member does not extend above the upper surface of the printed circuit
board and does not extend below the lower surface of the printed circuit board.

31. (New) The assembly of claim 29, wherein the handle further comprises a guide that extends
beyond the second edge and supports the lower surface of the printed circuit board.

32. (New) The assembly of claim 29, wherein the first and second members interlock with an
interference fit.

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33. (New) The assembly of claim 29, further comprising a second handle attached to the printed circuit board, the second handle attached to an edge opposite the first edge by members that reversibly interlock.
34. (New) An apparatus for automated assembly of surface mount components to a printed circuit board comprising:
 - a handle with a first edge and a second edge, the first edge having a key with an first upper surface and a first lower surface;
 - a printed circuit board having a second upper surface, a second lower surface, and a third edge, the third edge having a keyhole passing from the second upper surface through the second lower surface;
 - the handle attached to the printed circuit board by the key reversibly interlocking with keyhole;
 - wherein the first upper surface of the key does not extend above the second upper surface of the printed circuit board, and the first lower surface of the key does not extend below the second lower surface of the printed circuit board; and
 - wherein the second edge of the handle extends clear of components overhanging the printed circuit board.
35. (New) The apparatus of claim 34, wherein the key interlocks with the keyhole with an interference fit.
36. (New) The apparatus of claim 34, further comprising a guide member attached to the handle, the guide member projecting from the handle to support the second lower surface of the printed circuit board.

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37. (New) An apparatus for assembling a printed circuit board using automatic equipment, the apparatus comprising a printed circuit board with leading and trailing edges, wherein the leading and trailing edges have handles reversibly attached thereto, the handles to extend clear of surface mount components which overhang the leading and trailing edges.
38. (New) A handle, comprising:
 - a first edge having at least one member to reversibly interlock with a corresponding member on a printed circuit board;
 - a second edge, opposing the first edge, to be handled by automated assembly equipment and to extend clear of components overhanging the printed circuit board.
39. (New) The handle of claim 38, wherein the at least one member is a male member that extends from the first edge.
40. (New) The handle of claim 38, further comprising a guide that extends beyond the first edge to support the printed circuit board.
41. (New) A printed circuit board comprising:
 - a first edge having a female keyhole formed therein;
 - an upper surface having surface mount components attached thereto;
 - wherein at least one surface mount component overhangs beyond the first edge;
 - and wherein the female cutout allows a handle to be reversibly attached thereto during attachment of the surface mount components.